

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION**

VISION SPHERE LABS, LLC,

Plaintiff,

v.

BIGLEAF NETWORKS, INC.,

Defendant.

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Civil Action No. 3:25-cv-01626

**PLAINTIFF VISION SPHERE LABS, LLC'S
COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Vision Sphere Labs, LLC, (VSL) by and through its attorneys, brings this action and makes the following allegations of patent infringement relating to United States Patent No. 7,990,860 (the “’860 patent”), and 7,769,028 (the “’028 patent”). Defendant Bigleaf Networks, Inc. (“BigLeaf”) infringes Plaintiff’s ‘860 and ’028 patents in violation of the patent laws of the United States of America, 35 U.S.C. § 1, *et seq.*

PARTIES

1. Plaintiff VSL is a Texas Limited Liability Company with a place of business at 17350 State Highway 249 STE 220, Houston, Texas, 77064.

2. Upon information and belief, Defendant Bigleaf is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business located at 2850 SW Cedar Hills Blvd. Beaverton, OR 97005. Defendant Bigleaf may be served with process through its registered agent National Registered Agents, Inc., at 1999 Bryan St., Ste. 900, Dallas, TX 75201.

JURISDICTION AND VENUE

3. This is an action for patent infringement arising under the patent laws of the United States of America, Title 35, United States Code.

4. This Court has original jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. Upon information and belief, Defendant is subject to this Court's general and/or specific personal jurisdiction because they (a) have committed acts of infringement in the State of Texas as alleged below; and/or (b) are engaged in continuous and systematic activities in the State of Texas.

6. Venue is proper in this district under 28 U.S.C. § 1400(b). On information and belief, Defendant Bigleaf has committed acts of infringement in this District as set forth below. On information and belief, customers purchase and use Defendant Bigleaf's Accused Instrumentalities (defined below) in this District, on the internet or in physical brick and mortar stores. On information and belief, Defendant Bigleaf also has operated, and currently operates one of its gateway clusters in this district within Dallas, TX¹.

7. In particular, Defendant has committed and continues to commit acts of infringement in violation of 35 U.S.C. § 271, and has made, used, marketed, distributed, offered for sale, sold, and/or imported infringing products in the State of Texas, including in this District, and engaged in infringing conduct within and directed at or from this District. For example, Defendant has purposefully and voluntarily placed the Accused Instrumentalities into the stream of commerce with the expectation that the Accused Instrumentalities will be used in this District. The Accused Instrumentalities have been, and continue to be, distributed to and

¹ <https://status.bigleaf.net/>

used in this District. Defendant's acts cause and have caused injury to VSL, including within this District.

THE '860 PATENT

8. U.S. Patent No. 7,990,860 ("the '860 Patent") is entitled "Method and system for rule-based sequencing for QoS" and was issued on August 2, 2011. A true and correct copy of the '860 Patent is attached as Exhibit A.

9. The '860 Patent was filed on June 16, 2006, as U.S. Patent Application No.11/454,220.

10. VSL is the owner of all rights, title, and interest in and to the '860 Patent, with the full and exclusive right to bring suit to enforce the '860 Patent, including the right to recover for past infringement.

11. The '860 Patent discloses, among other things, "a method for communicating data over a network to provide Quality of Service," including "prioritizing the data, and communicating the data based at least in part on the priority." Exhibit A at Abstract. According to the '860 Patent, "Quality of Service (QoS)" "refers to one or more capabilities of a network to provide various forms of guarantees with regard to data that is carried." *Id.* at 4:16-18. The '860 Patent states that "[t]he primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency (required by some real-time and interactive traffic), and improved [data] loss characteristics." *Id.* at 4:27-32.

12. The '860 Patent is valid and enforceable under United States Patent Laws.

13. Like the '028 Patent, discussed *infra*, the '860 Patent recognized various shortcomings of existing QoS systems. As one example, the '860 Patent states that "[e]xisting QoS systems cannot provide QoS based on message content at the transport layer" of the Open Systems Interconnection (OSI) seven-layer protocol model. Exhibit A at 5:2-3. Indeed, the '860 Patent

explains that the “Transmission Control Protocol (TCP),” which is a protocol at the transport layer, “requires several forms of handshaking and acknowledgements to occur in order to send data,” and “[h]igh latency and [data] loss may result in TCP hitting time outs and not being able to send much, if any, meaningful data over [] a network.” *Id.* at 1:57-60, 3:53-57. As another example, the ‘860 Patent states that “[c]urrent approaches to QoS often require every node in a network to support QoS, or at the very least, for every node in the network involved in a particular communication to support QoS,” but such approaches to QoS “do[] not scale well because of the large amount of state information that must be maintained at every node and the overhead associated with setting up such connections.” *Id.* at 4:36-39, 4:47-50. As yet another example, the ‘860 Patent states that “[d]ue to the mechanisms existing QoS solutions utilize, messages that look the same to current QoS systems may actually have different priorities based on message content,” but “data consumers may require access to high-priority data without being flooded by lower-priority data.” *Id.* at 4:64-5:1

14. In discussing the shortcomings of the prior art, the ‘860 Patent recognized that “[t]here is a need for systems and methods for providing QoS on the edge of a [] data network,” and “a need for adaptive, configurable QoS systems and methods in a [] data network.” Exhibit A at 5:19-22. The claimed inventions of the ‘860 Patent provide such systems and methods.

THE INVENTIONS CLAIMED IN THE ‘860 PATENT WERE NOT WELL-UNDERSTOOD, ROUTINE, OR CONVENTIONAL

15. Given the state of the art at the time of the inventions of the ‘860 Patent, including the deficiencies with existing QoS systems for computer networks, the inventive concepts of the ‘860 Patent cannot be considered to be conventional, well-understood, or routine. *See, e.g.*, Exhibit A at 1:57-60, 3:53-57, 4:36-39, 4:47-50, 4:64-5:2, 5:19-22. The ‘860 Patent discloses, among other

things, an unconventional solution to problems arising in the context of communications networks that relied on existing QoS systems, namely, that such QoS systems did not scale, were not adaptive or configurable to different network types or architectures, and could not provide QoS based on message content at the transport layer, among other deficiencies. *See, e.g., id.*

16. To address one or more deficiencies with existing QoS systems, the inventions of the '860 Patent offered a technological solution that facilitated providing an improved technique for communicating data over a network, which helped to control jitter and latency and improve data loss, among other benefits. In particular, the inventions of the '860 Patent provided a specific, unconventional solution for prioritizing data as part of and/or at the top of the transport layer by sequencing the data based at least in part on a user defined rule. *See, e.g., id.* at Abstract, Claims 1, 13, 17. In this respect, the inventions of the '860 Patent improved the technical functioning of computers and computer networks by reciting a specific technique for prioritizing data communications over a network. *See, e.g., id.* at 4:11-37, 4:57-5:9.

17. Indeed, it was not well-understood, routine, or conventional at the time of the invention of the '860 Patent for a communication device to include (i) a network analysis component configured to determine a network status from a plurality of network statuses based on analysis of network measurements, and determine at least one of an effective link speed and a link proportion for at least one link, (ii) a mode selection component configured to select a mode from a plurality of modes that corresponds with at least one of the plurality of network statuses based on the determined network status, where each of the plurality of modes comprises a user defined sequencing rule, (iii) a data prioritization component configured to operate at a transport layer of a protocol stack and prioritize the data by assigning a priority to the data, where the prioritization component includes a sequencing component configured to sequence the data based at least in part

on the user defined sequencing rule of the selected mode, (iv) a data metering component configured to meter inbound data by shaping the inbound data at the data communications system for the at least one link, and meter outbound data by policing the outbound data at the data communications system for the at least one link, and (v) a data communication component configured to communicate the data based at least in part on the priority of the data, the effective link speed, and/or the link proportion. *See, e.g.*, Exhibit A at Claims 1, 15, 20.

18. Moreover, it was not well-understood, routine, or conventional at the time of the invention of the '860 Patent for the user defined sequencing rule mentioned above to be dynamically reconfigurable. *See, e.g.*, Exhibit A at Claim 5. It was also not well-understood, routine, or conventional at the time of the invention of the '860 Patent for a communication device to receive the data at least in part from an application program operating on the node, or pass the data at least in part to an application program operating on the node. *See, e.g., id.* at Claims 6, 12. Further, it was not well-understood, routine, or conventional at the time of the invention of the '860 Patent for a communication device to prioritize the data by differentiating the data based at least in part on message content, protocol information, or a user defined differentiation rule. *See, e.g., id.* at Claims 8-11.

19. These are just exemplary reasons why the inventions claimed in the '860 Patent were not well-understood, routine, or conventional at the time of the invention of the '860 Patent.

20. Consistent with the problems addressed being rooted in QoS systems for computer networks, the '860 Patent's inventions naturally are also rooted in that same technology that cannot be performed solely with pen and paper or in the human mind. Indeed, using pen and paper or a human mind would not only ignore the stated technical solution of the '860 Patent noted above and the technical problem that the '860 Patent was specifically designed to address. Likewise, at

least because the ‘860 Patent’s claimed inventions address problems rooted in QoS systems for computer networks, these inventions are not merely drawn to longstanding human activities.

THE ‘028 PATENT

21. U.S. Patent No. 7,769,028 (“the ‘028 Patent”) is entitled “Systems and methods for adaptive throughput management for event-driven message-based data” and was issued on August 3, 2010. A true and correct copy of the ‘028 Patent is attached as Exhibit B.

22. The ‘028 Patent was filed on June 21, 2006, as U.S. Patent Application No. 11/471,923.

23. VSL is the owner of all rights, title, and interest in and to the ‘028 Patent, with the full and exclusive right to bring suit to enforce the ‘028 Patent, including the right to recover for past infringement.

24. The ‘028 Patent is valid and enforceable under United States Patent Laws.

25. The ‘028 Patent expired on September 5, 2022. Prior to this, the ‘028 Patent was alive during the period of six-years prior to the filing of this Complaint and September 5, 2022.

26. The ‘028 Patent discloses, among other things, “a method for communicating data including prioritizing data by assigning a priority to the data, analyzing a network to determine a status of the network, and communicating data based at least in part on the priority of the data and the status of the network.” Exhibit B at Abstract. The ‘028 Patent also discloses “Quality of Service (QoS),” which “refers to one or more capabilities of a network to provide various forms of guarantees with regard to data this is carried.” *Id.* at 4:16-18. The ‘028 Patent states that “[t]he primary goal of QoS is to provide priority including dedicated bandwidth, controlled jitter and latency (required by some real-time and interactive traffic), and improved [data] loss characteristics.” *Id.* at 4:27-31.

27. In discussing QoS, the ‘028 Patent recognized various shortcomings of existing QoS systems. As one example, the ‘028 Patent states that “[e]xisting QoS systems cannot provide QoS based on message content at the transport layer” of the Open Systems Interconnection (OSI) seven-layer protocol model. Exhibit B at 5:1-2. Indeed, the ‘028 Patent explains that the “Transmission Control Protocol (TCP),” which is a protocol at the transport layer, “requires several forms of handshaking and acknowledgements to occur in order to send data,” and “[h]igh latency and [data] loss may result in TCP hitting time outs and not being able to send much, if any, meaningful data over [] a network.” *Id.* at 1:57-60, 3:53-57. As another example, the ‘028 Patent states that “[c]urrent approaches to QoS often require every node in a network to support QoS, or at the very least, for every node in the network involved in a particular communication to support QoS,” but such approaches to QoS “do[] not scale well because of the large amount of state information that must be maintained at every node and the overhead associated with setting up such connections.” *Id.* at 4:35-39, 4:46-49. As yet another example, the ‘028 Patent states that “[d]ue to the mechanisms existing QoS solutions utilize, messages that look the same to current QoS systems may actually have different priorities based on message content,” but “data consumers may require access to high-priority data without being flooded by lower-priority data.” *Id.* at 4:61-67.

28. In discussing the shortcomings of the prior art, the ‘028 Patent recognized that “[t]here is a need for systems and methods for providing QoS on the edge of a [] data network,” and “a need for adaptive, configurable QoS systems and methods in a [] data network.” Exhibit B at 5:17-20. The claimed inventions of the ‘028 Patent provide such systems and methods.

THE INVENTIONS CLAIMED IN THE ‘028 PATENT WERE NOT WELL-UNDERSTOOD, ROUTINE, OR CONVENTIONAL

29. Given the state of the art at the time of the inventions of the ‘028 Patent, including the deficiencies with existing QoS systems for computer networks, the inventive concepts of the ‘028 Patent cannot be considered to be conventional, well-understood, or routine. *See, e.g.*, Exhibit B at 1:57-60, 3:53-57, 4:35-39, 4:46-49, 4:61-67, 5:1-2, 5:17-20. The ‘028 Patent discloses, among other things, an unconventional solution to problems arising in the context of communications networks that relied on existing QoS systems, namely, that such QoS systems did not scale, were not adaptive or configurable to different network types or architectures and could not provide QoS based on message content at the transport layer, among other deficiencies. *See, e.g., id.*

30. To address one or more deficiencies with existing QoS systems, the inventions of the ‘028 Patent offered a technological solution that facilitated providing an improved technique for communicating data over a network, which helped to control jitter and latency and improve data loss, among other benefits. In particular, the inventions of the ‘028 Patent provided a specific, unconventional solution for prioritizing data as part of and/or at the top of the transport layer, dynamically changing rules for assigning priority to data, and communicating data based at least in part on the priority of the data and the status of the network. *See, e.g., id.* at Claims 1, 13, 17; 7:29-31. In this respect, the inventions of the ‘028 Patent improved the technical functioning of computers and computer networks by reciting a specific technique for prioritizing data communications over a network. *See, e.g., id.* at 4:11-37, 4:57-5:9.

31. Indeed, it was not well-understood, routine, or conventional at the time of the invention of the ‘028 Patent for a communication device to (i) prioritize data by assigning priority to data, where the prioritization occurs either as part of and/or at the top of the transport layer, (ii) analyze a network to determine a status of the network, (iii) select a mode based on the status of

the network, (iv) change rules for assigning priority to the data based on the mode, and (v) communicate the data based at least in part on the priority of the data and the status of the network, where the data is communicated at a transmission rate metered based at least in part on the status of the network. *See, e.g.*, Exhibit B at Claim 1. Moreover, it was not well-understood, routine, or conventional at the time of the invention of the '028 Patent for a communication device to receive the data at a node on the edge of the network. *See, e.g.*, Exhibit B at Claim 5. It was also not well understood, routine, or conventional at the time of the invention of the '028 Patent for a communication device to receive the data at least in part from an application program and/or communicate the data to an application program. *See, e.g., id.* at Claims 6, 12. Further, it was not well-understood, routine, or conventional at the time of the invention of the '028 Patent for a communication device to assign the priority to the data based at least in part on message content of the data, protocol information of the data, or a user defined rule. *See, e.g., id.* at Claims 7-9.

32. Additionally, it was not well-understood, routine, or conventional at the time of the invention of the '028 Patent for a communication system to include (i) a data prioritize component adapted to assign a priority to data, where the prioritization occurs either as part of and/or at the top of the transport layer, (ii) a network analysis component adapted to determine a status of the network, (iii) a mode selection component adapted to select a mode based at least on the status of the network, and (iv) a data communications component adapted to communicate the data based at least in part on the priority of the data and the status of the network, where the data prioritization component is adapted to assign priority to the data based on prioritization rules that are selected based on a selected mode, and where the data is communicated at a transmission rate metered based at least in part on the status of the network. *See, e.g.*, Exhibit B at Claims 13, 17. It was also not well-understood, routine, or conventional at the time of the invention of the '028 Patent for a

communication system to include a data organization component adapted to organize the data with respect to other data based at least in part on the priority of the data. *See, e.g., id.* at Claim 14.

33. These are just exemplary reasons why the inventions claimed in the ‘028 Patent were not well-understood, routine, or conventional at the time of the invention of the ‘028 Patent.

34. Consistent with the problems addressed being rooted in QoS systems for computer networks, the ‘028 Patent’s inventions naturally are also rooted in that same technology that cannot be performed solely with pen and paper or in the human mind. Indeed, using pen and paper or a human mind would not only ignore, but would run counter to, the stated technical solution of the ‘028 Patent noted above and the technical problems that the ‘028 Patent was specifically designed to address. Likewise, at least because the ‘028 Patent’s claimed inventions address problems rooted in QoS systems for computer networks, these inventions are not merely drawn to longstanding human activities.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 7,990,860

35. Plaintiff incorporates paragraphs 1-33 as though fully set forth herein.

36. Defendant Bigleaf has infringed and is infringing, either literally or under the doctrine of equivalents, the ‘860 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, products that operate with the “Traffic Shaping” feature, which supports numerous Bigleaf routers, switches, and/or platforms listed on Bigleaf’s website (collectively referred to herein as the “Accused ‘860 Products”), that infringe at least one or more claims of the ‘860 Patent. *See, e.g.,* <https://support.bigleaf.net/hc/en-us/articles/6930536060315-How-does-Bigleaf-provide-dynamic-Quality-of-Service>.

37. As just one non-limiting example, set forth in Exhibit C² is exemplary evidence of infringement of Claim 15 of the ‘860 Patent in connection with the Accused ‘860 Products. This description is based on publicly available information. VSL reserves the right to modify this description, including, for example, on the basis of information about the Accused ‘860 Products that it obtains during discovery.

38. Additionally, Defendant Bigleaf has been and/or currently is an active inducer of infringement of the ‘860 Patent under 35 U.S.C. § 271(b) and contributory infringer of the ‘860 Patent under 35 U.S.C. § 271(c).

39. Bigleaf’s end-user customers directly infringe at least one or more claims of the ‘860 Patent by using the Accused ‘860 Products in their intended manner to infringe.

40. Additionally, Bigleaf contributorily infringes at least one or more claims of the ‘860 Patent by providing the Accused ‘860 Products and/or software components thereof, that embody a material part of the claimed inventions of the ‘860 Patent, that are known by Bigleaf to be specially made or adapted for use in an infringing manner and are not staple articles with substantial non-infringing uses. The Accused ‘860 Products are specially designed to infringe at least one or more claims of the ‘860 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

² An element-by-element pleading is not required of VSL at this stage; VSL provides Exhibit C merely to articulate why it is plausible that the accused instrumentalities infringe.

41. At least as early as the filing and/or service of this Complaint, Bigleaf's infringement of the '860 Patent was and continues to be willful and deliberate, entitling VSL to enhanced damages.

42. Additional allegations regarding Bigleaf's knowledge of the '860 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

43. VSL is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '860 Patent.

44. VSL is entitled to recover from Bigleaf all damages that VSL has sustained as a result of Bigleaf's infringement of the '860 Patent, including, without limitation, a reasonable royalty.

45. The limitation of damages provision of 35 U.S.C. § 287(a) is not applicable to Plaintiff.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 7,769,028

46. Plaintiff incorporates paragraphs 1 through 45 as though fully set forth herein.

47. Defendant Bigleaf has infringed and is infringing, either literally or under the doctrine of equivalents, the '028 Patent in violation of 35 U.S.C. § 271 *et seq.*, directly and/or indirectly, by making, using, offering for sale, or selling in the United States, and/or importing into the United States without authority or license, products that operate with the "QoS Configuration" features, which supports numerous Bigleaf routers, switches, and/or platforms listed on Bigleaf's website (collectively referred to herein as the "Accused '028 Products"), that infringe at least one or more claims of the '028 Patent. *See, e.g.,* <https://support.bigleaf.net/hc/en-us/articles/6930536060315-How-does-Bigleaf-provide-dynamic-Quality-of-Service>.

48. VSL also incorporates the attached preliminary claim charts, Exhibit C, to the extent applicable, to further demonstrate the infringing functionality. The statements and

descriptions in Exhibit C are based on publicly available information. VSL reserves the right to modify its statements and descriptions, including, for example, on the basis of information about the Accused '028 Products that it obtains during discovery.

49. Additionally, Defendant Bigleaf has been and/or currently is an active inducer of infringement of the '028 Patent under 35 U.S.C. § 271(b) and contributory infringer of the '028 Patent under 35 U.S.C. § 271(c).

50. Additionally, Bigleaf contributorily infringes at least one or more claims of the '028 Patent by providing the Accused '028 Products and/or software components thereof, that embody a material part of the claimed inventions of the '028 Patent, that are known by Bigleaf to be specially made or adapted for use in an infringing manner, and are not staple articles with substantial non-infringing uses. The Accused '028 Products are specially designed to infringe at least one or more claims of the '028 Patent, and their accused components have no substantial non-infringing uses. In particular, on information and belief, the software modules and code that implement and perform the infringing functionalities identified above are specially made and adapted to carry out said functionality and do not have any substantial non-infringing uses.

51. Additional allegations regarding Bigleaf's knowledge of the '028 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

52. VSL is in compliance with any applicable marking and/or notice provisions of 35 U.S.C. § 287 with respect to the '028 Patent.

53. VSL is entitled to recover from Bigleaf all damages that VSL has sustained as a result of Bigleaf's infringement of the '028 Patent, including, without limitation, a reasonable royalty.

DEMAND FOR JURY TRIAL

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff requests the following relief:

- (a) A judgment in favor of Plaintiff that Defendant has directly infringed and/or has indirectly infringed by way of inducement of one or more claims of the Asserted Patents;
- (b) A judgment and order requiring Defendant to pay Plaintiff damages adequate to compensate for infringement under 35 U.S.C. § 284, which damages may include lost profits but in no event shall be less than a reasonable royalty for their usage made of the inventions of the Asserted Patents, including pre- and post-judgment interest and costs, including expenses and disbursements;
- (c) A judgment awarding treble damages against Defendant for willful infringement pursuant to 35 U.S.C. § 284;
- (d) A judgment awarding Plaintiff its costs as provided under Fed. R. Civ. P. 54(d)(1);
- (e) A judgment for pre- and post-judgment interest on all damages awarded;
- (f) A judgment awarding Plaintiff post-judgment royalties; and
- (g) Any and all such further necessary or proper relief as this Court may deem just and equitable.

Dated: June 24, 2025

Respectfully submitted,

BUETHER JOE & COUNSELORS, LLC

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